Abstract ID : 375

Title : Genetic evidence for multiple stocks of minke whales threatened by hunting and bycatch in coastal waters of Japan and Korea

Category : Conservation

Student :

Preferred Format : Oral Presentation

Abstract : The 'comprehensive assessment' of the Northern Pacific minke, Balaenoptera acutorostrata, by the International Whaling Commission considered two stocks in the western North Pacific, the 'O' stock in waters east of Japan and the 'J' stock in the East Sea/Sea of Japan. While the O stock is considered relatively abundant, and is the target of scientific hunting by Japan, the J stock is considered depleted as a result of past commercial hunting and was granted protection status in 1986. However, previous market surveys indicated that high levels of incidental takes (presumably fisheries bycatch) threaten the survival of J stock whales. Here we present genetic evidence of further subdivision of coastal stocks, with serious implications for the adequacy of the current IWC assessment. Minke whale products were purchased on commercial markets in Japan (n = 217) and the Republic of (South) Korea (n = 310) from 1993 to 2003. mtDNA sequences were used to distinguish four haplotype classes, one of which is characteristic of the O stock, and three of which are characteristic of the J stock. After subtraction of products with the characteristic O stock haplotype, the frequencies of J-stock haplotype differed significantly between Japan and Korean. The sex ratio of J-stock products also differed significantly, with a male bias in Korea and a female bias in Japan. Although the difference in sex ratio could be due to migratory patterns, the difference in mtDNA haplotype frequencies could only be explained by the existence of multiple coastal stocks around one or both countries. With the increasing number of whale reported as bycatch in both countries (n = 249 in 2001; n = 205 in 2002) and the recent increase in the scientific hunt by Japan (n = 150 for 2002), these coastal stocks could be threatened with depletion or extinction.